

AMENDMENT AND RESPONSE

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Serial No.: 10/777,955

Filing Date: February 12, 2004

Attorney Docket No. 125.025US02

Title: ELECTROLUMINESCENT DRIVER CIRCUIT

REMARKS

Applicant has reviewed the Office Action mailed on June 14, 2005 as well as the art cited. Claims 3 and 9 have been amended. Claims 1-40 are pending in this application.

Claim Objections

Claims 3, 9, and 37 were objected to because of informalities. The Applicant has amended claims 3 and 9 as requested by the Examiner. In regards to claim 37, the Applicant respectfully traverses the Examiner's objection. Claim 37 adds or fills in a step between the second element (cycling a first transistor) and the third element (storing energy). Moreover, use of the word "wherein" would be improper since "inductively pumping" has not been discussed in the elements in independent claim 36. Therefore, the Applicant respectfully requests the withdrawal of the Objections to claims 3, 9 and 37.

Rejections Under 35 U.S.C. § 102

Claims 1-20 and 22-40 were rejected under 35 USC § 102(b) as being anticipated by Andersson (U.S. Patent No. 6,157,138). To establish a section 102 rejection, a single reference must teach every aspect of the claim either explicitly or inherently. MPEP 706(02).

Claim 1

Independent claim 1 is as follows:

1. (Previously Presented) A method of operating an EL-lamp circuit, the method comprising:
storing energy on a first electrode of a EL-lamp with a power supply during a charging cycle; and
pumping the energy stored on the first electrode to a positive terminal of the power supply during a discharging cycle.

The Applicant respectfully traverses the Examiners rejection of independent claim 1 under section 102(b). The Andersson reference does not teach every aspect of Claim 1. For example the Andersson reference does not teach "pumping the energy stored on the first

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electrode to a positive terminal of the power supply during a discharging cycle,” as is claimed in claim 1 of the present application. The Andersson reference merely relates to recycling battery stored current on an EL device 12 by discharging it to a battery 30. Please see abstract, column 2, lines 63 through 66, column 5, line 63 and claim 1 of the Andersson reference. The “recycled battery stored current” in the Andersson reference is charge. Charge is stored on the load since current cannot be stored on a capacitive load. It is this charge on the load that is restored to the battery in the Andersson reference. Charge (Q) is represented by the equation $Q=CV$, where C is the value of the capacitor and V is the voltage. What is claimed in Claim 1 is “pumping the energy stored on the first electrode to a positive terminal of the power supply during a discharging cycle.” Energy (E) is represented by the equation $E = \frac{1}{2}CV^2$. As illustrated, energy (E) is different than charge (C). By “pumping energy” back to the power supply a more efficient system is obtained. Referring to Figure 3 of the present application, an example of pumping energy in one embodiment of the present application is explained. The pumping in this embodiment is accomplished with transistor 320 and discharging transistor 306. Assume that side 309 of the load is charged positively at the start of a discharge cycle. Transistor 320 is turned on and current will start to flow through diode 314 and 322 and inductor 306 into the positive terminal of the battery 310. Transistor is then turned off. Since, current through an inductor cannot change instantaneously, the current will continue to flow for some time through diode 326 and the inductor 306 into the positive terminal of the battery 310. The timing is set so that the current through the discharging inductor 306 does not have sufficient time to return to zero before transistor 320 is turned on again. **With this arrangement, more charge than is stored on the load 308 is returned to the battery.** On the other half cycle, the discharge is accomplished in a like manner through diode 316. This is pumping of energy is described in paragraphs 36 and 37 of the present application. The Anderson reference does not teach this aspect. Since, the Andersson reference does not teach all of the aspects of claim 1 of the present application, the rejection of claim 1 under section 102 is improper.

Accordingly, the Applicant respectfully requests the withdrawal of the rejection of Claim 1 under section 102. Moreover, the Applicant further requests the withdrawal of rejections to claims that depend from Claim 1 since these dependant claims further define patentably distinct Claim 1. Since, the Applicant believes these dependant claims are allowable for the above

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reasons, responses to all rejections to these claims may not have been put forth in this response. The Applicant, however, retains the right to address said rejections if a further response is required.

Claim 6

Independent claim 6 is as follows:

6. (Previously Presented) A method of operating a cycle of an EL-lamp driver circuit, the method comprising:

placing a select amount of positive charge on a first electrode of a load with a power supply with the use of a charging inductor;

discharging the positive charge on the first electrode to a positive terminal of the power supply with the use of a discharging inductor;

placing a select amount of positive charge on a second electrode of the load with the power supply with the use of the charging inductor; and

discharging the positive charge on the second electrode to the positive terminal of the power supply with the use of the discharging inductor.

The Applicant respectfully traverses the Examiners rejection of independent claim 6 under section 102(b). The Andersson reference does not teach every aspect of Claim 6. For example the Andersson reference does not teach “discharging the positive charge on the first electrode to a positive terminal of the power supply with the use of a discharging inductor,” or “discharging the positive charge on the second electrode to the positive terminal of the power supply with the use of the discharging inductor.” Emphasis added. The Andersson reference does not teach the use of a discharging inductor as is disclosed and claimed in claim 6 of the present application. Since, the Andersson reference does not teach all of the aspects of claim 6 of the present application, the rejection of claim 6 under section 102 is improper.

Accordingly, the Applicant respectfully requests the withdrawal of the rejection of Claim 6 under section 102. Moreover, the Applicant further requests the withdrawal of rejections to claims that depend from Claim 6 since these dependant claims further define patentably distinct

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Claim 6. Since, the Applicant believes these dependant claims are allowable for the above reasons, responses to all rejections to these claims may not have been put forth in this response. The Applicant, however, retains the right to address said rejections if a further response is required.

Claim 11

Claim 11 is as follows:

11. (Original) A method of operating a cycle of an EL-lamp driver circuit, the method comprising:

placing a select amount of positive charge on a first electrode of a load with a power supply;

discharging the positive charge on the first electrode to a positive terminal of the power supply;

placing a select amount of negative charge on the first electrode of the load with the power supply; and

discharging the negative charge on the first electrode.

The Applicant respectfully traverses the Examiners rejection of independent claim 11 under section 102(b). The Andersson reference does not teach every aspect of Claim 11. For example the Andersson reference does not teach "placing a select amount of positive charge on a first electrode" then "placing a select amount of negative charge on the first electrode of the load with the power supply; and discharging the negative charge on the first electrode," (emphasis added) as is claimed in claim 11 of the present application. In the embodiment of Figure 1, of the Andersson reference, a first electrode 11 of a load is charged with positive charges, column 3, line 66 to column 4, line 1 of the Andersson reference. The second terminal 13 of the load 12 is then charged negatively during a negative charge cycle, column 4, line 34-53 of the Andersson reference. This is not what is claimed in claim 11 of the present application. Since, the Andersson reference does not teach all of the aspects of claim 11 of the present application, the rejection of claim 11 under section 102 is improper.

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Accordingly, the Applicant respectfully requests the withdrawal of the rejection of Claim 11 under section 102. Moreover, the Applicant further requests the withdrawal of rejections to claims that depend from Claim 11 since these dependant claims further define patentably distinct Claim 11. Since, the Applicant believes these dependant claims are allowable for the above reasons, responses to all rejections to these claims may not have been put forth in this response. The Applicant, however, retains the right to address said rejections if a further response is required.

Claim 18

Independent Claim 18 is as follows:

18. (Previously Presented) A method of operating an EL-lamp circuit, the method comprising:
storing energy from a power supply on an EL-lamp during a charging cycle; and
returning energy stored on the EL-lamp to the power supply during a discharge cycle via inductive pumping.

The Applicant respectfully traverses the Examiners rejection of independent claim 18 under section 102(b). The Andersson reference does not teach every aspect of Claim 18. For example the Andersson reference does not teach "returning energy stored on the EL-lamp to the power supply during a discharge cycle via inductive pumping," as is claimed in claim 18 of the present application. In particular, please see the discussion above in regard to claim 1 about the difference in charge and energy transfer. Since, the Andersson reference does not teach all of the aspects of claim 18 of the present application, the rejection of claim 18 under section 102 is improper.

Accordingly, the Applicant respectfully requests the withdrawal of the rejection of Claim 18 under section 102. Moreover, the Applicant further requests the withdrawal of rejections to claims that depend from Claim 18 since these dependant claims further define patentably distinct Claim 18. Since, the Applicant believes these dependant claims are allowable for the above reasons, responses to all rejections to these claims may not have been put forth in this response. The Applicant, however, retains the right to address said rejections if a further response is required.

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Claim 36

Claim 36 is as follows:

36. (Currently amended) A method of operating an EL-lamp circuit, the method comprising:
- selectively providing a charging path from a power supply to the EL-lamp during a charging cycle;
 - cycling a first transistor in response to a first digital signal during the charging cycle;
 - storing energy from a power supply on an EL-lamp during the charging cycle;
 - selectively providing a discharging path ~~form~~ from the EL-lamp to the power supply during a discharging cycle;
 - cycling a second transistor in response to a second digital signal during the discharging cycle; and
 - returning energy stored on the EL-lamp to the power supply during the discharge cycle via inductive energy pumping.

The Applicant respectfully traverses the Examiners rejection of independent claim 18 under section 102(b). The Andersson reference does not teach every aspect of Claim 18. For example the Andersson reference does not teach "returning stored energy ... via inductive energy pumping," as is claimed in Claim 36 of the present invention. Please see the explanation and argument put forth in regards to Claim 1.

Accordingly, the Applicant respectfully requests the withdrawal of the rejection of Claim 36 under section 102. Moreover, the Applicant further requests the withdrawal of rejections to claims that depend from Claim 36 since these dependant claims further define patentably distinct Claim 36. Since, the Applicant believes these dependant claims are allowable for the above reasons, responses to all rejections to these claims may not have been put forth in this response. The Applicant, however, retains the right to address said rejections if a further response is required.

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Claim 21 was objected to as being dependent upon a rejected base claim, but was indicated to be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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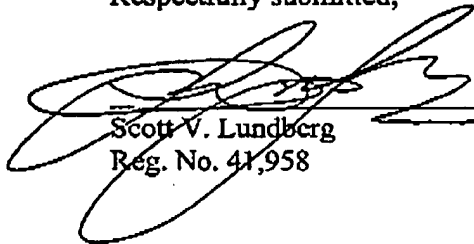
CONCLUSION

Applicant respectfully submits that claims 1-40 are in condition for allowance and notification to that effect is earnestly requested. If necessary, please charge any additional fees or credit overpayments to Deposit Account No. 502432.

If the Examiner has any questions or concerns regarding this application, please contact the undersigned at (612) 332-4720.

Respectfully submitted,

Date: 9-12-05


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